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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/036,033	12/31/2001	Stefan Van Waasen	1999 P 2204	3729

7590 11/28/2003

LERNER AND GREENBERG, P.A.  
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HOLLYWOOD, FL 33022-2480

EXAMINER


KINKEAD, ARNOLD M

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 11/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/036,033	WAASEN ET AL. 	
	<b>Examiner</b>	<b>Art Unit</b>	
	Arnold M Kinhead	2817	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

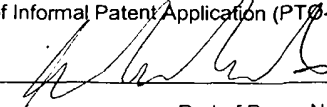
**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____   |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>08-25-03</u> . | 6) <input type="checkbox"/> Other:  |

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#### DETAILED ACTION

1. The indicated allowability of claims 3 and 4 is withdrawn in view of the newly cited reference(s) to Steyaert et al(cited by applicants). Rejections based on the newly cited reference(s) follow.

#### *Drawings*

2. The drawing correction for figure 3 was received on 08-25-0. The drawing is approved.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1,2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bijker et al in view of Steyaert et al( new cite by applicant).

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The reference by Bijker et al discloses a device for demodulating an FM signal(see figure 1), and col. 6, lines 8-50, mixers(M2i,M2q) for converting the FM signal into orthogonal components(I, first component; Q, 2<sup>nd</sup> component); a polyphase filter(RA1,RA2) with inputs receiving the first and second components and outputting a first output signal(VI) and a second output signal(VQ). An additional mixer(M32) for receiving the first component(I), and the second output signal(VQ). The other mixer M31 receives the second component(Q) and the first output signal(VI). As noted in col. 4, the filter(RA1,RA2) have symmetrical bandpass characteristics about  $F_{res}$ (i.e. I.F. frequency). The method steps of claim 5 being inherent to the structure as noted above. Note the orientation step is inherent due to the polyphase filtering of the quadrature components.

The reference does not show conventional details of a polyphase filter, however, the reference to Steyaert et al, see figure 7, will highlight the polyphase filter structure that is made use of in a FM receiver. Also, the characterization for the gain factors for the first and second amplifiers with respective gain(2Q,-2Q) factors set to a value fromed from the quotient of the zero-if( $W_o$ ) and the cutoff( $W_c$ ) is not highlighted by the Bijker et al reference.

With regards the specific polyphase filter structure, see figure 7 and pp. 158-159, Steyaert et al shows the filter comprising a first low pass characteristic filter(top square block element) with input and output. A first amplifier with gain(2Q) is shown connected to the output of the first low pass characteristic filter. The amplifier has an output. A second low pass characteristic filter is shown at the bottom of the circuit in another block. A second amplifier with gain(-2Q) is shown connected to the output of the second LPF. First and second adders are shown respectively coupled to each other and the quadrature inputs.

With regards the respective gain factors, p. 158, Q is shown to be dependent on the cutoff( $W_c$ ) and intermediate frequency( $W_o$ ). The amplifiers are shown to have respective gain factors(2Q,-2Q). This is thus inherent.

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In light of the above, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have made use of the specific polyphase filter as described by Staeyert et al in the general polyphase filter of Bijker et al, to allow for the symmetrical multipath processing that enhances the quality of the receiver. The respective gain factors are shown as noted above for the amplifiers.

*Conclusion*

6. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on ~~8/25/03~~<sup>8/25/03</sup> prompted the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinkead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Arnold M Kinkead  
Primary Examiner  
Art Unit 2817

Arnold Kinkead  
Nov. 20, 2003